

What is claimed is:

1. An expansion valve comprising:

a flange portion; and

a tube member formed separately from said flange portion;

said tube member having fixed to its interior a guide member, an orifice member and a plate member; said tube member further comprising a shaft member passing through said guide member and said orifice member and driving a valve member disposed within a valve chamber defined by said orifice member, a spring supported by said plate member and biasing said valve member toward said orifice member, a lid member sandwiching between said flange portion a diaphragm and defining a gas charge chamber, and a stopper member in contact with said diaphragm and transmitting the displacement of said diaphragm via said shaft member to said valve member;

wherein said lid member is fixed to said flange portion with said diaphragm sandwiched therebetween, said flange portion is integrated with said tube member, and said gas charge chamber together with said diaphragm constitutes a drive mechanism of said valve member.

2. An expansion valve according to claim 1, wherein said flange portion is integrated with said tube member through welding.

3. An expansion valve according to claim 1 or claim 2,

wherein said flange portion and said lid member are fixed through welding.

4. An expansion valve according to claim 1, claim 2 or claim 3, wherein said guide member, said orifice member and said plate member are fixed to said tube member through caulking.

5. An expansion valve comprising:

a flange portion; and

a tube member formed integrally with said flange portion;  
said tube member having fixed to its interior a guide member, an orifice member and a plate member; said tube member further comprising a shaft member passing through said guide member and said orifice member and driving a valve member disposed within a valve chamber defined by said orifice member, a spring supported by said plate member and biasing said valve member toward said orifice member, a lid member sandwiching between said flange portion a diaphragm and defining a gas charge chamber, and a stopper member in contact with said diaphragm and transmitting the displacement of said diaphragm via said shaft member to said valve member;

wherein said lid member is fixed to said flange portion with said diaphragm sandwiched therebetween, said tube member having integrally formed thereto a separately formed tube member, and said gas charge chamber together with said diaphragm constitutes a drive mechanism of said valve member.

6. An expansion valve according to claim 5, wherein said separately formed tube member is integrated through welding.

7. An expansion valve according to claim 5, wherein said flange portion and said tube member are formed as separate components and then welded together.

8. An expansion valve according to claim 5 or claim 6, wherein said flange portion and said lid member are fixed together through welding.

9. An expansion valve according to any one of claims 5 through 8, wherein said guide member, said orifice member and said plate member are fixed to said tube member through caulking.